

29th.—S. S. "Buenos Ayrean," in N. 46° 20', W. 52° 30', passed close alongside a large iceberg at 8.42 p. m.

30th.—S. S. "Buenos Ayrean," in N. 46° 20', W. 52° 58', passed a large iceberg.

31st.—S. S. "Gallia," in N. 42° 54', W. 50° 05' at 3.30 p. m., passed a large iceberg.

SIGNAL SERVICE AGENCIES.

Signal Service agencies have been established in the Maritime Exchange buildings at New York City and Philadelphia, and in the Custom-House, Boston, where the necessary blanks and other information will be furnished to ship-masters.

In pursuance of arrangements made with the Meteorological Office of London, England, there were cabled to that office from New York during May, 1886, nine reports concerning storms and icebergs encountered by vessels in the Atlantic west of the forty-fifth meridian; one message was sent from Boston.

TEMPERATURE OF THE AIR.

[Expressed in degrees, Fahrenheit.]

The distribution of mean temperature over the United States and Canada for May, 1886, is exhibited on chart ii by the dotted isothermal lines; and in the tables of miscellaneous data are given the monthly mean temperatures, with the departures from the normal, for the various stations of the Signal Service.

In the following table are given the mean temperatures for the several geographical districts, with the normals and departures, as deduced from Signal Service observations:

Average temperatures for May.

Districts.	Average for May Signal-Service ob- servations.		Comparison of May, 1886, with the average for several years.
	For sev- eral years.	For 1886.	
	°	°	°
New England	54.7	54.6	- 0.1
Middle Atlantic States	61.9	60.9	- 1.0
South Atlantic States	69.9	70.1	+ 0.2
Florida Peninsula	76.5	75.8	- 0.7
Eastern Gulf States	72.3	71.4	- 0.9
Western Gulf States	73.0	74.0	+ 1.0
Rio Grande Valley	79.8	77.9	- 1.9
Tennessee	68.6	68.4	- 0.2
Ohio Valley	64.8	65.1	+ 0.3
Lower Lake region	56.8	55.9	- 0.9
Upper Lake region	51.1	51.8	+ 0.7
Extreme Northwest	52.4	55.8	+ 3.4
Upper Mississippi Valley	62.8	64.3	+ 1.5
Missouri Valley	59.9	63.8	+ 3.9
Northern slope	52.5	56.7	+ 4.2
Middle slope	59.3	65.6	+ 6.3
Southern slope	69.6	75.0	+ 5.4
Southern plateau	65.9	69.6	+ 3.7
Middle plateau	55.3	59.1	+ 3.8
Northern plateau	56.5	58.8	+ 2.3
North Pacific coast region	55.3	56.2	+ 0.9
Middle Pacific coast region	62.3	62.2	+ 0.1
South Pacific coast region	66.4	67.6	+ 1.2

On chart iv the departures from the normal temperature are illustrated by lines connecting stations of normal or equal abnormal values.

From this chart will be seen that the temperature for May was below the normal in all districts bordering on the lakes and the Gulf of Mexico; also in New England (except eastern Massachusetts and Connecticut), the middle Atlantic states, and generally in that portion of the country lying between the Alleghany Mountains and the Atlantic Ocean, except a strip of sea-shore extending from Cape Hatteras, North Carolina, to Jacksonville, Florida. The Mississippi Valley and all the country lying to the west, except central California, was above the normal, the excess being most marked in the middle slope, southern slope, and southern plateau, these regions averaging 6° above the normal.

In the districts where the mean temperature was below the normal the departures were generally slight.

The following are some of the most marked departures from the normal temperature at Signal Service stations:

Above normal.		Below normal.	
	°		°
West Las Animas, Colorado	8.4	Brownsville, Texas	3.5
Fort Elliott, Texas	7.2	Grand Haven, Michigan	3.0
Fort Sill, Indian Territory	6.5	Baltimore, Maryland	2.6
Huron, Dakota	6.2	New Orleans, Louisiana	2.4
Fort Apache, Arizona	6.1	Oswego, New York	2.2
Fort Smith, Arkansas	5.5	Washington City	2.1
Deadwood, Dakota	5.5	Mobile, Alabama	2.1
Prescott, Arizona	5.3	Galveston, Texas	1.8

DEVIATIONS FROM NORMAL TEMPERATURES.

In the table below are given, for certain stations, as reported by voluntary observers, the normal temperatures for May for a series of years, the mean temperature for May, 1886, and the departures from the normal:

Station.	County.	Normal tem- perature for May.	Number of years.	Mean tem- perature for May, 1886.	Departure.
Arkansas.					
Lead Hill	Boone	66.1	4	74.4	+ 8.3
California.					
Fall Brook	San Diego	60.9	10	62.0	+ 1.1
Sacramento	Sacramento	64.5	20	66.2	+ 1.7
Connecticut.					
Middletown *	Middlesex	56.9	28	56.7	- 0.2
Thompson *	Windham	56.5	30	55.9	- 0.6
Dakota.					
Webster	Day	55.5	3	62.6	+ 7.1
Illinois.					
Anna	Union	66.6	11	69.8	+ 3.2
Mattoon	Coles	64.3	6	68.0	+ 3.7
Riley	McHenry	56.9	25	57.9	+ 1.0
Sycamore	De Kalb	58.6	6	58.2	- 0.4
Indiana.					
Logansport	Cass	63.8	30	66.6	+ 2.8
Lafayette	Tippecanoe	62.7	7	62.3	- 0.4
Mauzy	Rush	60.4	6	62.0	+ 1.6
Spiceland	Henry	61.6	32	63.8	+ 2.2
Vevay	Switzerland	65.4	21	67.3	+ 1.9
Iowa.					
Cresco	Howard	58.1	10	60.1	+ 2.0
Monticello	Jones	59.7	33	61.1	+ 1.4
Kansas.					
Independence	Montgomery	66.4	15	71.9	+ 5.5
Lawrence	Douglas	65.5	18	68.5	+ 3.0
Wellington	Sumner	64.6	8	67.6	+ 3.0
Yates Center	Woodson	63.2	6	68.9	+ 5.7
Maine.					
Belfast *	Waldo	52.0	27	53.2	+ 1.2
Bridgeton *	Cumberland	53.9	11	53.4	- 0.5
Cornish	York	52.6	29	54.6	+ 2.0
Gardiner	Kennebec	53.4	50	54.0	+ 0.6
Orono *	Penobscot	52.3	18	53.4	+ 1.1
Maryland.					
Fallston	Harford	60.1	15	59.3	- 0.8
Massachusetts.					
Amherst *	Hampshire	56.8	49	58.5	+ 1.7
Cambridge *	Middlesex	56.0	64	56.6	+ 0.6
Fitchburg *	Worcester	55.2	30	56.1	+ 0.9
New Bedford *	Bristol	54.6	74	55.3	+ 0.7
Springfield *	Hampden	58.9	19	60.0	+ 1.1
Somerset	Bristol	58.2	16	59.3	+ 1.1
Taunton *	Bristol	58.6	16	57.3	- 1.3
Williamstown *	Berkshire	56.5	32	56.7	+ 0.2
Nevada.					
Carson City	Ormsby	57.1	7	59.6	+ 2.5
New Brunswick.					
Saint John *	Saint John	47.0	26	48.9	+ 1.9
New Hampshire.					
Concord *	Merrimac	57.8	18	56.0	- 1.8
Hanover *	Grafton	55.5	21	54.7	- 0.8
New York.					
North Volney	Oswego	53.1	19	54.1	+ 1.0
Palermo	Oswego	53.2	33	52.6	- 0.6
Plattsburg Barracks	Clinton	54.6	17	55.2	+ 0.6
Ohio.					
Wauseon	Fulton	58.7	16	60.4	+ 1.7
Westerville	Franklin	59.7	10	61.4	+ 1.7
Pennsylvania.					
Dyberry	Wayne	54.7	20	54.4	- 0.3
South Carolina.					
Stateburg	Sumpter	70.1	6	71.5	+ 1.4
Texas.					
New Ulm	Austin	74.5	14	76.1	+ 1.6
Vermont.					
Lunenburg *	Essex	52.3	38	52.3	0.0
Newport *	Orleans	55.9	12	55.4	- 0.5
Stratford	Orange	56.2	12	55.7	- 0.5
Virginia.					
Bird's Nest	Northampton	65.0	18	66.8	+ 1.8
Dale Enterprise	Rockingham	61.9	6	67.3	+ 5.4
Variety Mills	Nelson	63.6	9	63.3	- 0.3
West Virginia.					
Helvetia	Randolph	58.1	10	58.4	+ 0.3

* From the "Bulletin of the New England Meteorological Society."

In connection with this subject the following notes are furnished by voluntary observers:

California.—Sacramento: the warmest May during the past twenty years was in 1875; mean temperature, 70° 5. The coldest during the same time was in 1879; mean temperature, 59° 7.

Fall Brook, San Diego county: the highest mean temperature for May during the past ten years was 64° 2, in 1885; lowest, 59° 3, in 1877.

Santa Barbara, Santa Barbara county: the mean temperature of the month was 60° 5; that of the warmest day, the 16th, 65° 5, and the coldest, the 1st, 54° 0. The average daily range of the thermometer was 21° 3; the greatest daily range was 30° 0, on the 16th; the least, 13° 5, on the 2d and 30th.

Illinois.—Riley, McHenry county: the mean temperature of the spring of 1886, 45° 2, is 1° 5 higher than the mean of twenty-five springs past; six springs, 1863, 1871, 1878, 1879, and 1880, were warmer.

Indiana.—Vevay, Switzerland county: the maximum temperatures for May during the past twenty-one years were 98° 0, in 1866; 95° 0, in 1867 and 1868; 94° 0, in 1881; lowest, 35° 0, in 1867; 32° 0, in 1875 and 1876; 30° 0, in 1877. The maximum temperature of May, 1886, 89° 0, corresponds within a fraction of the mean maximum, 89° 6, of twenty-one years. The minimum temperature for this month, 43° 0, is 1° 5 above the mean minimum, 41° 5, of twenty-one years.

Iowa.—Monticello, Jones county: the highest May temperature during the past thirty-three years occurred in 1856, 95° 0; lowest in 1885, 25° 0. The mean temperature for March, April, and May, 1886, 47° 4, is 4° 4 above the mean of the same months in 1885.

Kansas.—Yates Centre, Woodson county: the mean temperature of the spring months of this year, 54° 3, is 2° 3 above the mean spring temperature of the past six years.

Independence, Montgomery county: the mean temperature for the five months ending May 31st, 44° 4, is 2° 0 below the average of the same period for the last fourteen years.

Wellington, Sumner county: the highest mean temperature for May during the past eight years, 71° 2, occurred in 1880; the lowest, 58° 2, in 1882.

Maine.—Cornish, York county: the warmest May during the past twenty-nine years was in 1879; mean temperature, 59° 0.

New York.—Palermo, Oswego county: the warmest May during the past thirty-three years was in 1880; mean temperature being 60° 7; the coldest was in 1867, 47° 5.

North Volney, Oswego county: the highest mean temperature for May during the past nineteen years occurred in 1880, 62° 4; lowest in 1882, 50° 2. The mean temperature for this spring is 43° 8; the normal spring temperature for the past nineteen years is 41° 5; the warmest spring during the same period was 1878, 47° 4; coldest spring, 1885, 37° 6.

Ohio.—Westerville, Franklin county: the highest May mean temperature during the past ten years occurred in 1880, 65° 0; the lowest during the same time occurred in 1882, 55° 1.

Wauseon, Fulton county: during the past sixteen years the highest May mean temperature was in 1880, 64° 3; the lowest in 1882, 52° 2; the maximum temperature for May during that time occurred in 1874, 103° 2; minimum in 1885, 21° 0. The mean temperature of the spring of 1886 is 2° 9 above the normal spring temperature.

Texas.—New Ulm, Austin county: the highest mean temperature for May during the past fourteen years occurred in 1879, 77° 4; lowest in 1885, 72° 0; the maximum temperature in that time was 98° 0, in 1874; minimum 46° 0 in 1876. The normal spring temperature of the past fourteen years is 68° 6; temperature of the spring of 1886 is 67° 2, which is 1° 4 below the mean.

Virginia.—Dale Enterprise, Rockingham county: the highest mean temperature for May during the past six years was 69° 8, in 1881; lowest mean 40° 6, in 1883.

Variety Mills, Nelson county: the highest mean temperature for May during the past nine years was 68° 0, in 1880; lowest mean, 60° 2, in 1877. The mean temperature for the spring of 1886 is 53° 9, which is only 0° 1 below the mean of the past nine years; in that time the highest was 57° 5, in 1878, the lowest, 51° 9, in 1885.

RANGES OF TEMPERATURE.

The monthly, and the greatest and least daily, ranges of temperature for the Signal Service stations will be found in the tables of miscellaneous meteorological data. The monthly ranges were greatest in the northern plateau and northern slope, and least along the Pacific coast and in Florida.

The following are some of the greatest and least monthly ranges at Signal Service stations:

Greatest.		Least.	
Poplar River, Montana	70.5	Key West, Florida	21.4
Fort Maginnis, Montana	69.1	San Diego, California	22.3
Winnemucca, Nevada.....	68.4	Tatoosh Island, Washington Territory	22.6
Fort Custer, Montana.....	68.1	Fort Canby, Washington Territory	24.8
Fort Benton, Montana.....	67.1	Galveston, Texas.....	26.4
Fort Shaw, Montana.....	67.0	Cedar Keys, Florida.....	27.6
Boise City, Idaho.....	64.8	Capo Hatteras, North Carolina.....	31.3

FROSTS.

Frosts occurred in the various states and territories during the month on the following dates:

Arizona.—Wilcox, 14th; Prescott, 14th, 15th.

British Columbia.—New Westminster, 3d, 4th.

California.—Fort Bidwell, 1st; Hydesville, 1st, 2d; Murietta, 6th, 7th.

Colorado.—Pike's Peak, 2d; Montrose, 2d, 15th; Fort Lewis, 13th; Denver, 15th.

Connecticut.—North Colebrook and New Haven, 1st, 18th; Bethel, 13th, 17th, 18th.

Dakota.—Webster, 1st, 3d, 4th, 6th, 15th, 16th; Fort Sully, 2d, 4th; Fort Yates, 2d, 3d, 5th; Bismarck, 2d, 4th, 6th, 15th; Fort Totten, 2d, 4th, 15th; Fort Buford, 2d, 12th, 13th, 14th; Deadwood, 2d, 15th, 16th; Fort Pembina, 3d; Huron, 4th, 6th; Yankton, 14th.

Idaho.—Boisé Barracks, 1st, 10th, 14th.

Illinois.—Charleston, 1st, 16th, 17th; Sycamore, 2d, 5th, 7th, 16th, 25th; Geneseo, 7th, 16th; Bloomington, 15th; South Evanston, 15th, 16th; Springfield, 16th; Riley, Sandwich, and Windsor, 16th, 17th.

Indiana.—Spiceland, 8th, 17th, 26th; Lafayette, 16th; La Grange, Greencastle, and Logansport, 16th, 17th; Sunman, 16th, 17th, 26th; Knightstown, 17th, 26th.

Iowa.—Cedar Rapids a, 6th, 16th, 17th; Independence and Logan, 7th; Cresco and Bancroft, 7th, 16th; Cedar Rapids b, 7th, 16th, 17th; Fort Madison, Oskaloosa, Clinton, Keokuk, and Des Moines, 16th; Monticello, 16th, 17th.

Kansas.—Allison, 14th; Ninnescah and Dodge City, 15th; Independence, 30th.

Maine.—Gardiner, 1st, 2d, 3d, 18th; Cornish, 3d, 18th.

Maryland.—Baltimore, 7th.

Massachusetts.—Taunton, Deerfield, and Boston, 1st; Princeton, 1st, 2d, 3d; Westborough, 1st, 2d, 3d, 18th; Blue Hill Observatory, 1st, 3d; Amherst, 1st, 18th; Milton, 2d.

Michigan.—Escanaba, 2d, 5th to 9th, 15th, 16th, 17th, 25th, 26th; Grand Haven, 3d, 8th, 16th, 17th, 25th, 26th; Marquette, 5th, 8th, 25th; Mackinaw City, 6th, 7th, 17th, 26th; Traverse City, 6th, 24th, 25th; Alpena, 7th, 17th; Hudson, Birmingham, and Detroit, 8th, 17th; Thornville, 8th, 16th, 17th, 26th; Mottville, 16th, 17th, 26th; East Tawas, 16th, 17th, 26th, 27th; Lansing, 17th; Fort Brady, 17th, 26th.

Minnesota.—Moorhead, 2d, 4th, 6th, 14th, 15th, 16th; Saint Vincent, 4th, 6th, 14th, 15th, 16th; Minneapolis, 15th; Saint Paul, 16th.

Montana.—Fort Shaw, 1st, 2d, 4th, 11th, 14th; Fort Assinaboine, 1st, 4th, 11th, 13th, 14th; Poplar River, 2d to 6th, 13th, 14th, 15th; Fort Maginnis, 2d, 3d, 4th, 14th; Helena, 2d, 4th; Fort Benton, 3d, 4th, 13th.

Nebraska.—Hay Springs, 2d, 15th; North Platte, 14th; Valentine, Crete, Stockham, and Fairburg, 15th.

Nevada.—Carson City, 1st, 2d, 4th, 5th, 6th, 10th, 11th, 12th.

New Hampshire.—Nashua, 1st, 3d, 7th; Berlin Mills, 10th, 18th.

New Jersey.—Clayton, 17th, 18th.

New Mexico.—Santa Fé, 15th.

New York.—Mountainville, 1st; North Volney, 1st, 9th, 18th; Albany, 1st, 18th, 26th; Humphrey, 6th, 9th, 16th, 17th, 19th; Buffalo, 6th, 17th; Le Roy, 7th, 17th; Factoryville, 9th, 17th, 21st, 28th; Ithaca, 9th, 18th; Palmyra and Rochester, 17th; Cooperstown and Penn Yan, 17th, 18th.

North Carolina.—Reidsville, 26th.

Ohio.—Wauseon, 2d, 3d, 6th, 8th, 16th, 17th, 18th, 26th; Napoleon, 2d, 8th, 17th; Garrettsville, 3d, 17th, 21st; Cleveland, Hiram, North Lewisburg, Ruggles, West Milton, and Columbus, 17th; Westerville, 17th, 26th.

Oregon.—Albany, Lakeview, and Ashland, 1st; Fort Klamath, 1st, 2d; Eola, 2d.

Pennsylvania.—Dyberry, 1st to 4th, 17th, 18th; Wellsborough, 8th, 9th, 17th, 21st, 29th; Grampian Hills, 9th; Erie, Pittsburgh, and East Brook, 17th; Blooming Grove, 18th; Drifton and Philipsburg, 26th.

Tennessee.—Nashville, 1st; Ashwood, 2d.

Vermont.—Lunenburg, 10th; Strafford, Stowe, and Poultney, 18th.

Table of comparative maximum and minimum temperatures for May.

State or Territory.	Station.	For 1886.		Since establishment of station.			
		Max.	Min.	Max.	Year.	Min.	Year.
Alabama	Mobile	88.9	51.7	98.0	1878	47.3	1883
Do	Montgomery	93.0	49.7	98.0	1875	44.0	1883
Arizona	Prescott	92.1	33.0	90.5	1885	26.0	1877
Do	Fort Apache	96.3	33.0	93.0	1881	29.0	1880, 1883
Arkansas	Fort Smith	97.7	48.0	93.3	1883	41.5	1885
Do	Little Rock	92.3	48.5	91.0	1880	44.0	1883
California	San Francisco	85.8	47.8	86.0	1883	45.0	1876, 1879, 1880, 1882
Do	San Diego	72.3	50.0	94.0	1879	45.4	1883
Colorado	Denver	89.9	35.5	92.0	1874	27.0	1872, 1873
Do	Pike's Peak	47.0	8.0	47.0	1880	8.0	1875
Connecticut	New Haven	83.5	32.3	89.0	1880	30.5	1882
Do	New London	83.3	37.6	89.0	1881	32.0	1876, 1882
Dakota	Fort Buford	88.9	29.9	95.0	1880	20.0	1885
Do	Yankton	94.6	38.7	94.0	1880	24.0	1875
Delaware	Cape Henlopen						
Do	Del. Breakwater			89.0	1880	40.0	1880
District of Columbia	Washington City	83.8	43.4	96.0	1880	33.5	1876
Florida	Jacksonville	91.8	55.9	98.5	1878	48.0	1877
Do	Key West	90.9	69.5	93.2	1881	63.0	1877
Georgia	Atlanta	89.6	43.6	91.0	1879	39.5	1883
Do	Savannah	93.0	53.8	98.0	1878	48.0	1877
Idaho	Boise City	91.2	26.4	88.0	1881	29.0	1878
Do	Lewiston			92.0	1884	35.0	1881
Illinois	Chicago	87.6	48.5	92.0	1874	37.0	1875
Do	Chicago	82.1	39.9	89.0	1874	27.0	1875
Indiana	Indianapolis	87.1	39.1	89.0	1874, 1881	31.0	1877
Indian Territory	Fort Sill	103.5	46.7	97.0	1880	42.0	1885
Iowa	Dubuque			94.0	1874	25.9	1885
Do	Keokuk	86.0	40.1	92.0	1874	29.0	1875
Kansas	Dodge City	94.1	36.8	92.0	1880	13.0	1881
Do	Leavenworth	92.5	43.0	94.0	1874, 1875	31.0	1875
Kentucky	Louisville	88.5	46.2	93.0	1881	36.0	1875, 1876
Louisiana	New Orleans	90.7	57.4	90.0	1874	56.0	1871, 1877
Do	Shreveport	101.2	53.9	101.0	1875	47.0	1876, 1877
Maine	Eastport	67.4	35.4	80.0	1877	29.0	1882
Do	Portland	76.9	36.1	94.0	1880	34.0	1873, 1876
Maryland	Baltimore	87.5	45.2	95.0	1881	34.0	1876
Massachusetts	Boston	85.2	38.1	97.0	1880	31.0	1882
Michigan	Detroit	83.4	39.5	90.5	1881	29.0	1875
Do	Alpena	83.0	31.0	91.0	1874	22.0	1883
Minnesota	Duluth	84.0	41.9	91.0	1874	26.0	1870
Do	Saint Paul	84.3	33.2	94.0	1874	24.0	1875
Mississippi	Vicksburg	92.1	50.9	95.0	1874, 1877	46.0	1877
Missouri	Saint Louis	89.8	46.6	93.0	1874	32.0	1875
Montana	Fort Benton	94.5	27.4	93.0	1875	22.1	1885
Do	Helena	88.8	25.7	79.3	1885	21.9	1885
Nebraska	North Platte	91.6	36.3	94.0	1880	28.0	1885
Do	Omaha	92.9	41.0	92.0	1880	28.0	1875
Nevada	Winnemucca	88.1	19.7	86.4	1885	20.0	1879
New Hampshire	Mount Washington	49.2	18.5	62.0	1879	1.4	1885
New Jersey	Atlantic City	74.9	40.5	89.0	77, '80, '81	33.0	1876, 1880
Do	Sandy Hook	86.1	45.5	93.0	1880	33.0	1874
New Mexico	Santa Fe	82.7	34.0	89.0	1872	24.0	1880
New York	Buffalo	76.6	39.0	87.0	1876	29.0	1876
Do	New York City	86.0	42.0	94.0	1880	34.0	1876, 1880
North Carolina	Charlotte	92.0	45.0	94.4	1881	40.5	1883
Do	Wilmington	93.8	47.2	95.0	1878	38.0	1876
Ohio	Cincinnati	85.9	44.5	94.0	1874, 1875	35.0	1883
Do	Cleveland	80.0	36.1	92.0	1879	28.3	1876
Oregon	Portland	85.8	36.0	94.0	1885	33.0	1878
Do	Roseburg	89.2	30.5	88.7	1885	33.0	1880
Pennsylvania	Pittsburg	88.7	40.9	95.0	1881	27.0	1876
Do	Philadelphia	86.2	43.4	90.0	1880	36.0	1880
Rhode Island	Block Island	73.2	42.0	78.3	1881	36.0	1882
South Carolina	Charleston	94.0	49.9	94.0	1878	47.0	1876
Tennessee	Knoxville	88.5	43.9	93.0	1881	37.0	1880
Do	Nashville	91.2	44.7	93.0	1874, 1879	37.0	1877
Texas	Fort Davis	97.7	41.7	101.0	1881	40.0	1880, 1884
Do	Galveston	86.8	60.4	91.0	1875, 1877	54.0	1876
Utah	Salt Lake City	92.5	31.9	91.0	1874	32.0	1880
Virginia	Lynchburg	91.1	45.2	96.0	1881	37.0	1876
Do	Norfolk	87.0	44.7	98.0	1880	38.0	1876
Washington Ter.	Dayton			90.0	1880	30.0	1881
Do	Olympia	82.3	30.0	87.7	1885	30.0	1882
Wisconsin	La Crosse	84.0	39.8	96.0	1874	29.5	1885
Do	Milwaukee	85.8	35.3	90.0	1874	25.0	1875
Wyoming	Cheyenne			88.0	1874	22.0	1884

Virginia.—Wytheville, 8th; Marion, 9th, 19th; Variety Mills and Dale Enterprise, 17th, 26th, Glendower, 26th.

Washington Territory.—Port Angeles, 1st, 2d; Roseburg, 1st, 2d, 30th, 31st; Linkville, 1st 12th; Olympia, and Walla Walla, 3d.

West Virginia.—Parkersburg, 3d, 17th, 24th, 26th; Helvetia, 9th, 17th, 26th; Clarksburg, 17th, 21st, 24th.

Wisconsin.—Neillsville, 1st, 7th, 9th, 16th, 17th, 25th; Fond du Lac, 6th, 15th, 24th; Milwaukee and Manitowoc, 7th, 16th; Evansville, 7th, 16th, 17th, 25th; Embarras, 7th, 16th, 25th, 26th; Madison, 9th, 16th.

The following reports of injury to vegetation by frosts have been reported:

Boisé City, Idaho: on the 1st a very damaging frost occurred, blighting all kinds of vegetation.

Saint Vincent, Minnesota: a sudden fall of temperature during the night of the 5-6th produced a heavy frost. Much injury was done to growing vegetables. The most serious damage occurred on the Dakota side of the river. On the night of the 14-15th a heavy frost did considerable damage to all kinds of early vegetables, and was especially destructive to spring wheat.

Garrettsville, Portage county, Ohio: a frost on the morning of the 17th did considerable injury to vegetation.

ICE.

Ice formed in the various parts of the country during May, as follows:

Arizona.—Wilcox, 14th.

California.—Fort Bidwell, 1st.

Dakota.—Fort Totten, 15th.

Iowa.—Fort Madison, 16th.

Kansas.—Allison, 14th.

Michigan.—Hudson, 7th.

Ohio.—Garrettsville, 1st.

Oregon.—Linkville, 1st.

Wisconsin.—Milwaukee and Neillsville, 16th.

PRECIPITATION.

[Expressed in inches and hundredths.]

The distribution of rainfall over the United States and Canada for May, 1886, as determined from the reports of about seven hundred and fifty stations, is exhibited on chart iii.

In the following table are shown, for the several geographical districts, the normal precipitation for May; the average for May, 1886, and the excess or deficiency as compared with the normal:

Average precipitation for May.

Districts.	Average for May, Signal-Service observations.		Comparison of May, 1886, with the average for several years.
	For several years.	For 1886.	
	Inches.	Inches.	Inches.
New England	3.69	3.49	-0.20
Middle Atlantic States	3.02	6.47	+3.45
South Atlantic States	3.70	4.24	+0.54
Florida Peninsula	3.47	1.13	-2.34
Eastern Gulf States	4.50	3.06	-1.44
Western Gulf States	5.12	1.04	-4.08
Rio Grande Valley	3.52	4.08	+0.56
Tennessee	3.90	3.69	-0.21
Ohio Valley	3.90	4.35	+0.45
Lower lake region	3.30	2.91	-0.39
Upper lake region	3.48	1.93	-1.55
Extreme northwest	2.87	1.83	-1.04
Upper Mississippi Valley	4.25	3.51	-0.74
Missouri Valley	4.72	3.56	-1.16
Northern slope	2.24	1.06	-1.18
Middle slope	4.56	0.73	-3.83
Southern slope	2.73	0.16	-2.57
Southern plateau	0.51	0.04	-0.47
Middle plateau	1.55	0.10	-1.45
Northern plateau	1.50	0.88	-0.62
North Pacific coast region	2.35	1.44	-0.91
Middle Pacific coast region	0.82	0.39	-0.43
South Pacific coast region	0.33	0.02	-0.31

The precipitation for the month has been in excess of the normal in the Ohio Valley and Tennessee, the middle Atlantic states, and in the region adjacent to the Alleghany Mountains; also in parts of the lower lake region and New England. The excess has been most marked in Maryland and Virginia.

In Florida and all the states bordering on the Gulf of Mexico, in the upper lakes, the Mississippi Valley, and all the country westward to the Pacific Ocean, the precipitation has been below the average for May.

The greatest deficiencies occurred in the west Gulf states and Texas, where they varied from three to eight inches and averaged about four inches. Although this region was generally deficient in rainfall during the month, Brownsville, Texas, had an excess of over three inches.

The following are some of the most marked departures from the normal precipitation at Signal Service stations: